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Original Research Article

Otorhinolaryngological manifestations of tuberculosis

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ABSTRACT

Background: Tuberculosis (TB) of head and neck is a rare form of extrapulmonary TB but still poses a significant clinical and diagnostic challenge. Rare occurrence and unspecific symptoms of extrapulmonary tuberculosis often leads to misdiagnosis. The aim of the study was to evaluate the various otolaryngological manifestations of extrapulmonary TB and make otolaryngologist aware of these manifestations.
Methods: This prospective study included 40 cases who presented to us at a tertiary hospital with various symptoms of head and neck TB. Detailed history with ear, nose throat examination was carried out on all patients. Fine needle aspiration cytology (FNAC), histopathology and Acid-fast bacilli (AFB) staining were done to confirm the diagnosis. After confirmation, patients were started on anti-TB therapy and showed good response to the treatment.
Results: The study included 40 cases who presented to us at a tertiary hospital with various symptoms of head and neck tuberculosis. The majority of these cases had cervical lymphadenopathy (55%) followed by deep neck abscess (20%), laryngeal TB (15%), tubercular otitis media (7.5%) and nasal TB (2.5%). Majority of the cases (65%) belonged to lower socio-economic status. 42.5% of cases had family history of pulmonary TB. Six out of 40 subjects had co-existing pulmonary TB.
Conclusions: Otorhinolaryngeal TB can involve any site with unspecific symptoms. The most commonly site involved is cervical lymph node presenting as neck swelling. Variable nature of its manifestations makes it necessary to have high degree of clinical suspicion to make early diagnosis.

Keywords: Tubercular cervical lymphadenitis, Extra pulmonary tuberculosis, Laryngeal tuberculosis, Otolaryngology

INTRODUCTION

Tuberculosis (TB) is a communicable disease that is a major cause of ill health, one of the top 10 causes of death worldwide and the leading cause of death from a single infectious agent (ranking above HIV/AIDS).[1]

TB is caused by the bacillus Mycobacterium tuberculosis, that typically affects the lungs (pulmonary TB) but can also affect other sites (extrapulmonary TB). About a quarter of the world's population is infected with M. tuberculosis. It is estimated that extrapulmonary TB constitute 15-20% of TB cases among HIV negative adults in India. TB of head and neck region comprises 10% of all cases of extrapulmonary TB, mainly in the form of cervical lymphadenopathy, deep neck space abscess, tubercular laryngitis and pharyngitis.[2,3] Extra pulmonary TB poses a challenge in the diagnosis and monitoring of treatment due to its variable presentation and unspecific symptoms. The present study is conducted to assess the various otolaryngological manifestations of extrapulmonary TB affecting ear, nose head and neck region.

METHODS

The study was conducted in the otolaryngology head and neck surgery department. The study group comprised of 40 patients who presented in ENT OPD with tubercular presentation of the ear, nose and throat region from November 2018 to March 2021. From all the patients, a detailed history was taken including history of exposure to active case of pulmonary tuberculosis. Relevant past

and family history of tuberculosis was also obtained. The socio-economic status of all the patients was assessed.

General physical and local ear, nose and throat examination was carried out on all the patients. Chest X-ray was done in all the patients to rule out co-existing pulmonary TB. Radiological examination of the soft tissue neck, cervical spine and the mastoids was carried out in relevant cases.Fine needle aspiration cytology (FNAC) was performed on all suspected neck swellings. Investigations also included culture and sensitivity and AFB staining of the sputum, pus from discharging sinuses, abscess, laryngeal secretions and ear discharge. Cytological findings like presence of caseation necrosis or presence of Acid-fast bacilli (AFB) were considered as positive findings for the diagnosis of tuberculosis in FNAC.

Direct laryngoscopy and hypopharyngoscopy with biopsy was performed in patients, who presented with laryngeal symptoms and with suspected tubercular findings on endoscopic examination of the larynx.

Computed tomography scans and ultrasonography of the affected site was performed as necessary. On confirming the diagnosis, all the patients were treated with antitubercular drugs. The patients were followed up and evaluated for response to anti-TB treatment at regular intervals.

Statistical analysis

Data was analysed using SPSS software 17.0 and results were depicted as percentages and mean±SD.

RESULTS

40 patients ranged in the age from 10-50 years old. The majority of cases were in the age group of 21-30 years with a mean age of 24.5±8.32 years. Patients included 17 males (42.5%) and 23 females (57.5%) with a male to female ratio of 1:1.35 (Table 1).

Majority of patients, 22 (55%) had cervical lymphadenopathy. Out of 22, 10 patients (45.45%) presented with discrete cervical node swelling, 7 patients (31.81%) presented with matted lymph nodes and 5 patients (22.72%) had discharging sinus. The second most common manifestation was deep neck space infection found in 8 patients (20%). Out of 8 patients, 4 (50%) had retropharyngeal abscess, 2 patients (25%) had parapharyngeal space abscess and 1 patient (12.5%) had parotid abscess. Laryngeal tuberculosis was diagnosed in 6 patients (15%) with symptoms of hoarseness, cough and pain while swallowing.

Nasal tuberculosis was diagnosed in 1 case (2.5%), presented with epistaxis. TB otitis media was diagnosed in 3 cases (7.5%) with symptoms of refractory otorrhoea and hearing loss (Figure 1).

Table 1: Demographic profile of patients.

Variables	N	%
Age group (years)		
10-20	14	35
21-30	16	40
31-40	5	12.5
41-50	5	12.5
Gender		
Male	17	42.5
Female	23	57.5
Family H/O pulmonary TB		
Yes	27	67.5
No	13	32.5

Table 2: Symptoms and clinical findings in patients presenting with otolaryngologic TB.

Diagnosis	Presenting symptoms	Clinical findings
Tubercular cervical lymphadenitis	Neck swelling	Discrete lymph nodes, matted lymph nodes, discharging sinus
Deep neck space abscess	Fever, swelling neck, lateral face swelling, odynophagia	Bulging in posterior pharyngeal wall. Mass over parotid region.
Laryngeal TB	Hoarseness of voice, odynophagia, cough	Ulcerations over vocal cords, inter-arytenoids region, edematous epiglottis
Tubercular otitis media	Otorrhoea (painless), hearing loss	Perforation of tympanic membrane, pale granulation tissue in middle ear
Nasal tuberculosis	Nasal obstruction, epistaxis	Crusts formation, septal perforation

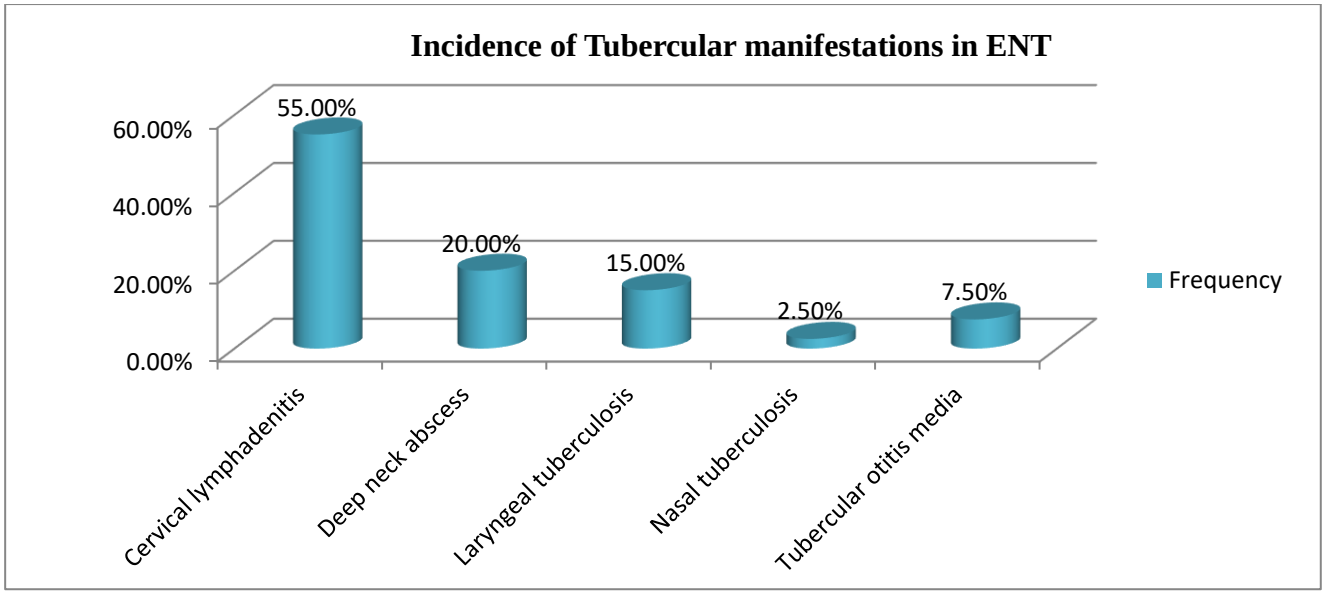

Figure 1: Incidence of tubercular manifestations.

DISCUSSION

TB is a global and leading infectious cause of death worldwide. TB is still a rampant disease in India with extrapulmonary forms of disease on the rise. A higher index of clinical suspicion is essential to diagnose extra pulmonary tuberculosis due to its lack of characteristic symptoms which often leads to misdiagnosis.

The present study showed a higher incidence of females (57.5%) affected with EPTB than males (42.5%). This corresponds to various studies where higher preponderance of females were noted.[4-6] A study conducted by Agarwal et al found a higher incidence of females was noted 42% males vs 58% females.[7]

The age group of 21-30 years was found to have the maximum number of cases (40%) with a mean age of 24.5±8.32 years. This was similar to the studies done by Arora et al and Soumyajit Das et al where most affected age group was from 15-24 years age which constituted 38% of the total cases.

Tubercular lymphadenitis is the most common form of EPTB, constituting 35-40% of EPTB.[10] In the present study cervical lymphadenitis was the commonest manifestation of TB seen in this study involving 55% of all cases of TB followed by deep neck space infection (20%), laryngeal TB (15%), tubercular otitis media (7.5%) and nasal TB (2.5%). In neck, the most commonly affected nodes were supraclavicular nodes followed by level II and level III. Baskota et al in their study found that level V node was most commonly involved while Jha et al found upper deep jugular nodes to be most commonly affected.[11,12] All patients with suspected neck swelling were advised FNAC and were started on antitubercular therapy after diagnosis.

The second most common manifestation was deep space neck infection seen in 8 cases. This is contrary to many of the studies where laryngeal TB has been found the second most common manifestation followed by deep neck space infection. Out of 8 cases,4 (50%) had retropharyngeal abscess, 2 patients (25%) had parapharyngeal space abscess and 1 patient (12.5%) had parotid abscess. All patients were evaluated for Contrast enhanced (CT) scan neck to isolate the exact location of lesion and its extent. Incision and drainage was done in all patients and pus was sent for culture and sensitivity followed by anti-tubercular therapy.

Six patients were diagnosed as tubercular laryngitis. All the patients presented with hoarseness of voice with pain and cough as the presenting complaints. Similar findings were reported by other studies.[13] Laryngoscopic examination was done in all patients where vocal cords were found to be involved. Inter-arytenoids granulations were noted in 2 patients. A high incidence of vocal fold involvement has also been reported in earlier studies.[14,15] All patients with laryngeal TB except two were positive for sputum for AFB. Those two patients were previously anti-tubercular therapy defaulter cases. Tuberculosis otitis media was diagnosed in 3 cases. All patients had refractory otorrhoea and hearing loss with large central perforation. All patients underwent tympanomastoidectomy under GA. Pale granulations were found in middle ear which were sent for HPE. These findings have also been reported by other studies.[16,17]

Nasal TB was diagnosed in one case who presented with nasal obstruction with epistaxis. On anterior rhinoscopic examination, perforation was seen in cartilaginous septum along with crusts. Biopsy of the marginal tissue was taken and sent for AFB staining which revealed AFB. Patient was started with anti-tubercular therapy.

CONCLUSION

Extrapulmonary TB can involve any organ or site and presents with unspecific symptoms. Thus, otorhinolaryngologist should have high index of clinical suspicion to make a diagnosis of head and neck tuberculosis as early diagnosis is of prime importance in these patients to prevent complications and start appropriate management.

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